

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of the claims in the application.

Listing of the Claims:

Claims 1-24 (canceled).

Claim 25 (currently amended): A vaccine composition which comprises:

(a) ~~antigenic material selected from~~

—— (i) an attenuated live mutant bacterium having a genome wherein a native ~~gene having a function of~~ ferric uptake regulation (~~fur gene~~) gene promoter, has been modified by deletion, insertion and/or substitution mutation whereby expression of a gene product corresponding to said fur gene is regulated independently of the iron concentration in the environment of the bacterium such that levels of expression of the modified fur are at least equal to those obtained using the native fur in the presence of low levels of ferric ions; and

(ii) ~~a non-viable preparation comprising bacterial membrane antigens from cultured cells of a mutant bacterium wherein a native gene having a function of ferric uptake regulation (fur gene has been modified by mutation whereby expression of a gene product corresponding to said fur gene is regulated independently of the iron concentration in the environment of the bacterium;~~

together with:

(b) a pharmaceutically acceptable diluent or carrier.

Claim 26 (original): The vaccine composition of claim 25, wherein said mutant bacterium comprises *Neisseria meningitidis*, *Neisseria gonorrhoeae*, *Helicobacter pylori*, *Salmonella typhi*, *Salmonella typhimurium*, or *E. coli*.

Claim 27 (canceled).

Claim 28 (currently amended): An attenuated mutant bacterium having a genome wherein a native ~~fur~~ ferric uptake regulation (fur) gene promoter, ~~having a function of ferric~~

~~uptake regulation~~, has been modified by deletion, insertion and/or substitution mutation whereby expression of the gene product corresponding to said fur gene is regulated independently of the iron concentration in the environment of the bacterium such that levels of expression of the modified fur are at least equal to those obtained using the native fur in the presence of low levels of ferric ions.

Claim 29 (original): The attenuated mutant bacterium of claim 28 which is a gram-negative bacterium.

Claim 30 (original): The attenuated mutant bacterium of claim 28, wherein the mutant bacterium comprises a *Neisseria meningitidis*, *Neisseria gonorrhoeae*, *Helicobacter pylori*, *Salmonella typhi*, *Salmonella typhimurium*, enteropathogenic *E. coli* (EPEC), enteroinvasive *E. coli* (EIEC), enterotoxigenic *E. coli* (ETEC), enterohaemorrhagic *E. coli* (EHEC), verotoxigenic *E. coli* (VTEC), *Vibrio cholerae*, *Shigella spp.*, *Haemophilus influenzae*, *Bordetella pertussis* or *Pseudomona saeruginosa* species.

Claim 31 (original): The attenuated mutant bacterium of claim 28, wherein the mutant bacterium comprises a *Neisseria meningitidis* or *Neisseria gonorrhoeae* species.

Claim 32 (original): The attenuated mutant bacterium of claim 28, which has a mutation of a gene essential for production of a bacterial metabolite or catabolite not produced by a human or animal.

Claim 33 (original): The attenuated mutant bacterium of claim 28, which has an attenuating mutation of gene selected from *aro*, *asd*, *pur* and *pyr* genes.

Claim 34 (original): The attenuated mutant bacterium of claim 33, wherein said mutation is of a gene selected from *aroA*, *aroB*, *aroC*, *aroD*, *aroL*, *purA*, *purB*, *purE*, *pyrA*, *pyrB* and *pyrE*.

Claim 35 (original): The attenuated mutant bacterium of claim 28, which has a *recA* mutation.

Claim 36 (original): The attenuated mutant bacterium of claim 28, which has a mutation by which expression of a toxin gene has been modified or eliminated.

Claim 37 (original): The attenuated mutant bacterium of claim 28, which has a mutation at a site homologous to the *E. coli minB* locus.

Claim 38 (original): The attenuated mutant bacterium of claim 28, which has a mutation in a gene involved in the uptake of DNA.

Claim 39 (original): The attenuated mutant bacterium of claim 38, which is of a species selected from *N. meningitidis* and *N. gonorrhoeae*, and wherein said mutation in said gene involved in uptake of DNA is *comA* mutation.

Claim 40 (original): The attenuated mutant bacterium of claim 28, which is of a species selected from *N. meningitidis* or *N. gonorrhoeae* and which has a mutation in the *galE* gene.

Claim 41 (original): The attenuated mutant bacterium of claim 40, which further has a mutation in the *opc* gene to modify or eliminate expression of *opc* protein.

Claim 42 (original): An attenuated mutant bacterial strain of the species *N. meningitidis* which has a genotype selected from:

- (a) mutation of *aroB*, *lac:fur* fusion, and mutation of *recA*;
- (b) mutation of *aroB*, mutation of *galE*, *lac:fur* fusion, and mutation of *recA*;
- (c) mutation of *aroL*, *lac:fur* fusion, and mutation of *recA*; and
- (d) mutation of *aroL*, mutation of *galE*, *lac:fur* fusion, and mutation of *recA*;

Claim 43 (original): The attenuated mutant bacterial strain of the species *N. meningitidis* according to claim 42, which also has at least one characteristic selected from: a *minB* mutation; an RTX negative phenotype; and an *opc* gene mutation whereby expression of said *opc* gene has been modified or eliminated.

Claim 44 (canceled).

Claim 45 (currently amended): A method of treating a subject to stimulate an immune response against the mutant bacterium, which is human or non-human animal, said method comprising vaccinating said subject with the vaccine composition of claim 25 thereby to stimulate an immune response against said bacterium.

Claims 46-48 (canceled).